

Application No 09/224756

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CLMPTO

1. (Currently Amended) A method for programming a read-only memory cell including a transistor formed in a semiconductor substrate of a first doping type, the transistor having a drain and a source of a second doping type separated in the substrate by a conduction channel, the method comprising a step of:

contradoping a first region of the source such that the first region is of the first doping type to prevent a transistor effect from occurring, the first region directly contacting the conduction channel;

wherein the step of contradoping includes a step of contradoping only the first region of the source of the transistor such that a second region of the source remains of the second doping type; and

wherein the second region has a lower doping concentration than the drain of the transistor.

2. CANCELED

3. (Currently Amended) A memory, in integrated circuit form, comprising:  
a plurality of transistors that form a corresponding plurality of memory cells, wherein each transistor has a drain and a source separated by a conduction channel, wherein a first transistor forms a corresponding programmed cell, and wherein the conduction channel and a first region of the source of the first transistor directly contact each other and wherein the first region is contradoped so that the first region and the conduction channel are of the same doping type, and wherein the drain is not contradoped;

wherein a second region of the source has a lower doping concentration than the drain of the transistor.

4. (Currently Amended) The memory of claim 3, wherein the drain and a the second region of the source of the first transistor are of the same doping type.

5. (Currently Amended) A memory, comprising:  
a plurality of cells formed in a substrate of a first doping type, the plurality of cells including a first programmed cell having a drain of a second doping type, a conduction channel of the first doping type, and a source, wherein the source includes a first region of the first doping type directly contacting the conduction channel;

wherein a second region of the source has a lower doping concentration than the drain;  
and

wherein the first region is the only region of the source that is contradoped.

6. (Currently Amended) The memory of claim 5, wherein the ~~source of the first programmed cell further includes~~ a second region is of the second doping type and contacts contacting the first region.

7. (Currently Amended) A memory, comprising:  
a plurality of cells formed in a substrate of a first doping type, the plurality of cells including a first programmed cell having a drain of a second doping type, a conduction channel of the first doping type, and a source including non-conducting means directly contacting the conduction channel and being contradoped for providing a non-conducting response in the conduction channel to prevent a transistor effect from occurring between the drain and the source when predetermined voltages are applied to the first programmed cell to read the first programmed cell;

wherein a region of the source not including the non-conducting means has a lower doping concentration than the drain; and

wherein the non-conducting means ~~are~~ is the only region of the source that is contradoped.

8. (Original) The memory of claim 7, wherein the non-conducting means is a first region of the source of the first programmed cell contradoped such that the first region is of the first doping type to form a degenerate transistor as the first programmed cell.

9. (Original) The memory of claim 8, wherein the first region of the source of the first programmed cell has a doping concentration less than that of the drain.

10. (Currently Amended) A method for programming a cell, comprising the steps of:  
forming, in a substrate of a first doping type, a first transistor having a drain of a second doping type, and a source of the second doping type at least a portion of which has a lower doping concentration than the drain, such that a portion of the substrate forms a conduction channel between the source and the drain; and  
contradoping only a first region of the source which directly contacts the conduction channel to make the first transistor degenerate.

11. (Previously Presented) The method of claim 10, wherein the step of contradoping includes the step of:

dividing the source into the first region, and a second region.

CLAIM 12 (CANCELLED)